K2 Exoplanet Ecliptic Survey – KEES

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For billions of years the Earth's shadow against the Sun has swept a path through space revealing our existence to the stellar neighbors that have passed within 0.26 degrees of the ecliptic. We propose to survey the GKM dwarf stars currently within 1.0 degrees of the ecliptic using the K2 spacecraft in order to identify transiting planetary systems that potentially could have discovered Earth via transit observations performed by another civilization in the last 100,000 years. This survey will significantly expand the number of planets known from the two Jupiter-class planets within 0.26 degrees of the current ecliptic (the hot-Jupiter, WASP-47b and the direct imaging, 5 Myr old 1RXS-J160929b) into the regime of Super-Earth size planets. We will employ our extensive background in the analysis of Kepler data in order to search and provide a catalog of planet candidates from the K2 data within the ecliptic using tools and techniques developed for Kepler. The primary goal is to generate a catalog of planet candidates for prioritization of SETI searches. Secondary goals are to provide a well vetted sample of planet candidates to the community to follow up for asteroseismic or spectroscopic stellar characterization and radial velocity confirmation.